Europe's Next Energy Revolution Might Still Be Fuel

I.D.

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For more than a decade, Europe has been pursuing an ambitious path towards decarbonisation, with electric mobility at the centre of its strategy. The European Green Deal and national incentives have positioned electric vehicles (EVs) as the symbol of a cleaner and more sustainable future. Yet, as energy systems face increasing strain and the cost of full electrification becomes clearer, a more balanced idea is emerging: Europe's next energy revolution might still be fuel.

This is not a defence of fossil energy. It is a recognition that innovation in synthetic and renewable fuels could help Europe decarbonise faster and more efficiently, while using the infrastructure it already has.

The limits of full electrification

The shift to electric mobility is essential, but scaling it to every vehicle across the continent exposes serious structural challenges. Electricity grids in many European countries are already under pressure during seasonal peaks, and full electrification would multiply demand. To power a completely electric vehicle fleet, Europe would need massive grid upgrades, new power plants, and millions of public and private chargers.

This transition would cost hundreds of billions of euros and take decades to complete. It would also increase Europe's dependency on imported raw materials such as lithium, nickel, and cobalt, which are essential for battery production. Most of these materials are extracted outside the European Union, often under conditions that raise environmental and ethical concerns.

Relying exclusively on electric mobility risks creating new dependencies and bottlenecks. Diversifying energy sources, including low-carbon fuels, would make the transition more resilient and balanced.

Synthetic and renewable fuels as a bridge

Synthetic fuels, also known as e-fuels, are produced by combining renewable hydrogen with captured carbon dioxide. The result is a liquid fuel that can power existing engines while being nearly carbon-neutral over its lifecycle. Renewable fuels such as Hydrotreated Vegetable Oil (HVO), made from waste fats and vegetable oils, are already being produced at industrial scale. They can be used in most modern diesel engines without modification and emit significantly less carbon than fossil diesel.

These fuels offer an immediate path to emission reduction without requiring the replacement of millions of vehicles. Instead of forcing a complete technological shift, they allow the existing fleet to become cleaner.

This is already happening in parts of Europe. In Romania, for example, refinery operators are assessing projects to integrate renewable diesel production using existing facilities (for ex. OMV Petrom's HVO project). This shows how traditional energy industries can evolve rather than disappear, supporting both climate goals and industrial stability.

Synthetic and renewable fuels also support energy sovereignty. By producing them within Europe, the continent can reduce its reliance on imported oil and gas while keeping value creation inside its borders.

Europe's hidden advantage: existing infrastructure

Europe already has one of the most advanced fuel distribution systems in the world. Refineries, pipelines, and fuel stations are widespread and efficient. This existing network represents an enormous opportunity for a low-carbon transition based on new fuels rather than an entirely new system.

Adapting this infrastructure to distribute synthetic and renewable fuels would be far less expensive than building millions of new charging points or reinforcing national power grids. It would also reduce the environmental footprint of the transition itself by reusing what already exists.

This path would allow drivers to keep their vehicles, transport companies to continue operating, and governments to advance towards carbon neutrality without forcing disruptive changes. It is a pragmatic approach that accelerates decarbonisation without imposing the social and economic cost of complete replacement.

Coexistence, not competition

Electric vehicles and low-carbon fuels are often portrayed as competing technologies, but they can and should coexist. Electric mobility works best in urban areas, where short distances and easy access to charging make it efficient. Renewable and synthetic fuels, on the other hand, are ideal for heavy transport, long distances, and regions where charging infrastructure remains limited.

Combining both systems would create a more resilient and flexible energy model. It would also prevent excessive strain on electricity demand, which could otherwise lead to instability or increased energy prices.

Europe's future should not depend on a single technology. A diversified approach that combines electric vehicles with low-carbon fuels would deliver faster emission cuts, strengthen energy security, and protect economic competitiveness.

The next European energy revolution might not come from abandoning fuel stations, but from transforming what flows through them.

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